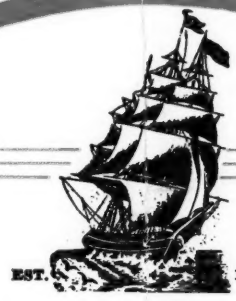
The American Fertilizer

Vol. 97 NOVEMBER 21, 1942 No. 11



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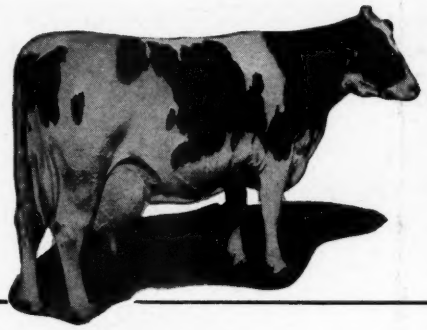

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...THE...

AMERICAN FERTILIZER

"That man is a benefactor to his race who makes two blades of grass to grow where but one grew before."

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The Atlanta Convention

Representative Attendance Considers Problems Facing the Industry. Panel Discussion Brings Out Matters Hindering Effective Operation ofFertilizer Program. Advantages of Current Program in Dealing with Post-War Problems.

THIS is strictly a business meeting," said President John A. Miller in opening the annual Southern Meeting of the National Fertilizer Association, held at the Biltmore Hotel, Atlanta, on November 17th and 18th. That statement set the keynote for the addresses and discussion which comprised the two-day program, which was attended by over 350 members of the industry. The problems of distribution of the coming season's output, the increased costs of materials, bagging, labor and transportation, the problems of transportation of fertilizer salesmen and service men were considered from all angles by both manufacturers and government officials.

At the opening session on September 17th, President Miller outlined the situation facing the industry at the opening of coming season. He emphasized the obligations resting upon the manufacturer to explain to the farmer the restrictions imposed by WPB Order M–231 and to see that tonnage is distributed equitably under the Grade Substitution Plan. "Our obligations to the war effort are clear cut," said Mr. Miller. "By reason of the necessity for streamlined procedure during the emergency, we have for the future an opportunity to function more efficiently and to serve better in the post-war period of rehabilitation."

Dr. F. W. Parker, head of the Division of Fertilizer Investigations, U. S. Department of Agriculture, spoke on the general subject of "The Fertilizer Situation and the War."

"Due to the great need for increased production to meet crop goals and to increase farm income, the demand for commercial fertilizers next season will be the heaviest in our country," said Dr. Parker. "Of the three major plantfoods, nitrogen has been most affected by the war. Imports from Europe have been cut off, imports from Chile have been increased, exports have been reduced, production of by-product ammonium sulphate has been increased, and synthetic nitrogen has been diverted from fertilizer to war purposes. The net result is that there will not be quite enough nitrogen to meet the increased demand. The extent of the shortage depends on how much Chilean nitrate can be brought in, and a part of the shortage will be made up by using surplus oilseed meals in mixed fertilizers, mainly in the Southeast.

"Production of superphosphate will reach a new high this year, and, barring difficulties in the transportation of phosphate rock and sulphur, there will be enough to meet all demands. The supply of concentrated superphosphate will be somewhat reduced, due to export to other United Nations.

"The potash situation is favorable due to the rapid development and expansion of our domestic potash industry. It would appear that there will be enough potash to meet our increased fertilizer and chemical requirements.

"A large amount of information as to fertilizer used by crops and States has been assembled since Pearl Harbor by the U. S. Department of Agriculture, with the assistance of the Land-Grant Colleges and the National Fertilizer Association. Also, since Pearl Harbor the problem of distribution has been studied by the Fertilizer Industry Advisory Committee. These studies indicated clearly the advisability of reducing the number of grades sold in most States;

of reducing the nitrogen content of mixed fertilizers, without reducing phosphoric acid and potash; and of increasing plant food content where large tonnages of low analysis fertilizers have been used. Conferences between representatives of the war agencies, the U. S. Department of Agriculture, the Land-Grant Colleges, the farm organizations, and the industry were held throughout the country during the summer, at which lists of grades to be sold in fertilizer-consuming States were selected and recommended to the War Production Board; and these lists of grades were made official by the War Production Board through the publication, on September 12, of Conservation Order No. M–231. By this order the number of grades sold in 33 States has been reduced from over 900 to 90; the number per State varying from 3 in Mississippi to 33 in Florida. Also through the cooperation of agronomists and horticulturists, greater uniformity in recommendations within regions has been obtained. The order of the War Production Board also prohibited the use of chemical nitrogen in mixed fertilizers for fall-sown small grains to be harvested for grain and for such non-essential uses as lawns and golf courses.

"A schedule has been worked out for each State, showing which of the new grades are to be substituted for the grades formerly sold in the State. It is expected that the indicated substitution of grades will result in the manufacture and sale of a tonnage of mixed fertilizer approximately equivalent to the 1941–42 tonnage; and, due to the saving of nitrogen in mixed fertilizers, the tonnage of nitrogen materials available for direct use will be about the same as in 1941–42."

In closing, Dr. Parker stated that, "The fertilizer industry is to be commended for the way in which it has worked with various governmental agencies on fertilizer problems. It has assumed a real task in accepting this responsibility for the equitable distribution of fertilizers in 1943. It is expected to measure up to the task and the responsibility."

Saving Southern Soils

The third address of the Tuesday session was given by Dr. T. S. Buie, regional conservator, Soil Conservation Service.

Spartanburg, S. C. "Total war requires that we put every acre of land to the use for which it is best adapted," said Dr. Buie. "The demand for the increased production of livestock products, as well as the shortage of labor, makes it necessary that we devote more of the farm acreage to improved pasture and hay crops which have relatively low labor requirements and provide vitally needed products. Fortunately the groundwork has been laid for the sound development of such a program on an extensive scale here in the Southeast."

Dr. Buie pointed out that the Soil Conservation Service began its work in 1933 on a demonstration basis, but that since 1937 laws have been passed in most States authorizing the organization of Soil Conservation Districts with which the Federal Government cooperates by furnishing technical assistance and that the Soil Conservation Service is now cooperating with 159 such districts which farmers themselves have organized in the Southeastern Region. Dr. Buie stated that up to June 30, 1942, the Soil Conservation Service has assisted more than 42,000 farmers in developing conservation programs on approximately 7,000,000 acres of land.

Idle Land Put Work

"One of the most striking features about the land conversion made on these farms," Dr. Buie said, "is that approximately 440,000 acres of formerly idle land have been reemployed and put to productive use as a result of conservation plans. Approximately 120,000 acres of this waste land are being brought back into cultivation and protected against erosion through the use of terraces, contour tillage, systematic rotations, including summer and winter cover crops, and other conservation measures. Nearly 124,000 acres are being converted to perennial hay, 96,000 acres are being developed for permanent pasture, 80,000 acres are being converted to woodland, 12,000 acres to wildlife, and the remainder to various miscellaneous uses. Thus 340,000 acres, or more than 77 per cent, of this formerly idle land has been brought back into cultivation or is being developed for pasture or hay crops that will make an immediate contribution to the economy of the farm. Of the more than 155,000,000 acres in farms in the Southeastern Region, nearly 10,000,000 acres are idle.

"Here in the Southeast the population pressure on the land is intense, and when we consider that we have only 5.7 acres of cropland per farm person, it is obvious that we cannot at any time afford to allow 10.5 acres of land per farm to remain idle. Every acre must be devoted to the use for which it is best adapted, must be protected against erosion, and made to produce the maximum yields of which it is capable.

Dr. Buie illustrated what is being accomplished by reference to a recent survey among 1,800 cooperating farmers. "On the 284 farms included in the survey in Alabama," he said, "cotton acreage has been reduced 23 per cent but the yield per acre has increased 31 per cent. And these 284 farmers have increased their total cotton yield by 40,000 pounds on 23 per cent fewer acres than they had in cotton before conservation plans were made. Likewise, the total corn acreage on these farms was reduced by 18 per cent but the corn yield was increased from 17.9 to 25.3 bushels per acre, an increase for the 284 farms of more than 41,000 bushels of corn on 18 per cent less land. In other words, these farmers have increased their total yields of both cotton and corn but at the same time have reduced the acreage of these crops by 17 acres per farm, and these acres are now available for development of pasture or the production of hay or other crops. They have more than doubled the acreage of improved pasture, have increased their yield of annual hay crops by more than 40 per cent, and of perennial hay by more than 500 per cent. The result is that on these farms the number of cattle has increased by 73 per cent, the number of hogs by 70 per cent, and of poultry by 53 per cent; and these increases are contributing directly to the supplies of vital food products needed in the successful prosecution of the war.

"The day is past when farmers in the South can be expected to devote their attention almost exclusively to the production of cotton and other row crops on an ever-shrinking acreage of good land. With only 5.7 acres of cropland per capita of farm population with which to feed ourselves and make our contribution to the welfare of the remainder of the world, we must put every acre of land on every farm to productive use and keep the land producing at its maximum capacity, not only this year but for many years to come. I have always felt that the fertilizer industry and the Soil Conservation Service have much in common. The goal towards which all of us are working is more efficient use of existing soil resources. This means more abundant production to meet the vital needs of this critical war period and the tremendous job of reconstruction that will come after victory has been won. It will also mean the attainment of that permanent type of agriculture which we all know is the rightful heritage of this region."

In the final address of the morning, John K. Westberg of the Office of Price Administration stated that in fixing prices the OPA was not undertaking to carry on a social revolution but merely helped win the war and turn business back to its former status. The "freezing" technique, he said, was being abandoned and the policy of allowances for jobber, manufacturer and retailer was being granted. Provisions for individual adjustments were being cut out.

Whether there would be a subsidy or a punctured ceiling price adjustment of fertilizer prices next season, Mr. Westberg said had been debated and it was decided to puncture the ceiling and allow prices to advance in keeping with increased costs of materials, transportation, bagging and labor. He apologized for not having prices ready but said they would be forthcoming December 1st and temporary arrangements may be made sooner for Florida.

Explanation was made of the oil meal situation, how a ceiling price had been made of $2 above the floor prices already fixed, and allowances are to be made for jobbers, wholesalers and even farmers for meals sold.

Problems of Fertilizer Distribution

The problem of how to distribute fertilizers and fertilizer materials equitably among all fertilizer-using farmers was the theme of the Wednesday session.

The first speaker was Dr. William H. Martin, consultant on fertilizers and insecticides to the War Production Board, Dean of the College of Agriculture, and Director of the New Jersey Experiment Station. He said: "Last July we met in Atlanta with representatives of the fertilizer industry, of the Land-Grant Colleges and other groups interested in agriculture, to discuss ways and means of developing a program which would insure an equitable distribution of available supplies of fertilizer to all users. Similar meetings were held in other areas. Without exception there was an apparent willingness to cooperate in every way possible in the development of a satisfactory plan.

"Since this series of meetings, the War Production Board has issued an Order (M–231) in which are listed the approved grades for various States as well as certain restrictions concerning the use of chemical nitrogen. Since the release of this order, some slight changes have been made and these will soon be released in an amended order.

"The mere listing of the approved grades does not, however, insure a saving of nitrogen. In view of this fact, it is expected that a substitute grade plan will be issued soon. This plan will be simple to operate and will make

(Continued on page 18)

November Cotton Report

A United States cotton crop of 13,329,000 bales is forecast by the Crop Reporting Board of the United States Department of Agriculture, based upon indications as of November 1, 1942. This is a decrease of 429,000 bales from the forecast as of October 1, and compares with 10,744,000 bales ginned in 1941, 12,566,000 bales in 1940, and 13,109,000 bales, the 10-year (1931–40) average. The indicated yield per acre of 274.9 pounds compares with 231.9 pounds in 1941, 252.5 pounds in 1940 and 215.0 pounds, the 10-year (1931–40) average.

More than two-thirds of the reduction in prospective production from a month ago occurred in Texas, Oklahoma, and Arkansas where a considerable proportion of the crop still remains to be ginned. Insect infestation has been unusually heavy and reduced the production over most of Oklahoma and parts of Texas. Moreover, greater than average rainfall has delayed picking and caused some loss in harvesting. There are also complaints of losses due to scarcity of labor. Substantial reductions from a month ago are also indicated for the Atlantic Coast States where some loss resulted from excessive rains early in October.

Very little change from a month ago is indicated for the group of States including Mississippi, Alabama, Tennessee, Missouri, and the western irrigated areas.

Cotton ginnings for the United States were reported by the Bureau of the Census at 9,726,443 running bales (counting round as half bales) ginned from the crop of 1942 prior to November 1st, compared with 7,961,157 for 1941 and 9,085,870 for 1940.

PRODUCTION (Ginnings)[1]
500 lb. gross wt. bales

	Average 1931–40	1941 Crop	1942 Crop Indicated Nov. 1
	Thous. bales	Thous. bales	Thous. bales
Missouri	315	476	458
Virginia	31	28	33
N. Carolina	626	552	705
S. Carolina	820	406	735
Georgia	1,074	624	870
Florida	28	17	18
Tennessee	478	598	620
Alabama	1,076	790	925
Mississippi	1,564	1,424	2,010
Arkansas	1,344	1,430	1,535
Louisiana	677	313	615
Oklahoma	745	718	745
Texas	3,686	2,652	3,223
New Mexico	103	106	137
Arizona	163	181	209
California	361	404	468
All other	17	25	23
United States	13,109	10,744	13,329
Sea Island[2]	.....	2.8	1.1
Amer. Egypt. U. S.[2]	18.0	59.8	97.8
Texas[2]	.....	.....	22.5
New Mexico[2]	.....	.....	15.0
Arizona[2]	17.8	41.5	59.0
California[2]	.....	.....	1.3

[1] Allowances made for interstate movement of seed cotton for ginning.

[2] Included in State and United States totals. Sea Island grown mostly in Georgia and Florida.

Solvay Plant Awarded Army-Navy "E"

The Army-Navy "E" for outstanding accomplishment in the production of war materials was awarded to the men and women of the Hopewell, Va., plant of The Solvay Process Company, subsidiary of Allied Chemical and Dye Corporation, at a ceremony held at the plant on November 11, 1942.

The Hopewell plant produces synthetic ammonia and ammonium nitrate, essential for explosive manufacture, as well as other synthetic nitrogen products including the well known fertilizer, nitrate of soda. This plant was the first plant in the United States to produce nitrate of soda on a commercial scale and is credited with having made the United States independent of foreign sources for this important material so vital to agriculture and national defense. Before completion of the plant in 1928 the United States was wholly dependent on imports of nitrate of soda from foreign sources.

In the prewar period the Hopewell plant was an important source of nitrogen for the chemical industry and for agriculture, and developed several new fertilizer materials. However, at present the plant is operating on war work, and is running 24 hours a day, 7 days a week. Nearly two years before Pearl Harbor, the Solvay Process Company initiated at its own expense a substantial increase in its nitrogen capacity at Hopewell. It is understood that the increase in output resulting from this step was the first additional nitrogen in the country to be made available to the Government since the outbreak of the war in Europe.

Citation and award of "E" pins were made by Lieutenant Commander Arnold T. Pamperin, U. S. N. R., and address and presentation of Army-Navy pennant were made by Major S. H. Franklin, Jr., U. S. A.

Agronomists Meet in St. Louis

Over 400 agronomists from all sections of the country attended the annual meeting of the American Society of Agronomy which was held in St. Louis, November 11th to 13th. It is, of course, impossible to review the scores of papers presented, many of which dealt with war and post-war problems. In his address as president of the society, Dr. Richard Bradfield of Cornell University predicted that American agronomists will play an important role in the post-war period, not only in this country but in many other parts of the world. Dr. F. W. Parker presented a very accurate and comprehensive picture of the present fertilizer situation. Dr. F. D. Keim of Nebraska was elected president of the society for the coming year, and Dr. F. W. Parker was elected vice-president, which means that he will be elected president next year. Those elected Fellows were: Dr. George D. Scarseth of Indiana, Prof. H. C. Rather of Michigan, Dr. J. K. Wilson of New York, H. H. Lande of Kansas, K. S. Quisenberry of Nebraska and Dr. Chas. E. Kellogg of the U. S. Department of Agriculture.

Prior to the meeting, a number of committees having to do with fertilizers and fertilizer application held their sessions, a brief summary of which follows.

Committee on Fertilizer Application

The Eighteenth Annual Meeting of the National Joint Committee on Fertilizer Application was held on November 9th, with an attendance of more than 80 agronomists, horticulturists, agricultural engineers, and representatives of the farm machinery and fertilizer industries. Fred H. Bateman, general chairman, presided. Summaries of results that have been obtained during the past season were presented for the Northeast by C. B. Sayre of New York, for the South by R. W. Cummings of North Carolina, for the Middle West by Gen. D. Scarseth of Indiana, and for the West by S. C. Vandecaveye of Washington (State). Reports on experiments involving the plowing under of fertilizer were presented by agronomists from 15 or more States. The indications are that this method has large possibilities but that in the case of row crops, it should be used in connection with row application.

At the luncheon Mr. Bateman was presented with a scrapbook containing 60 letters from his friends which had been assembled without his knowledge by H. R. Smalley. Charles J. Brand made the presentation with appropriate comments concerning Mr. Bateman's long service on the Committee and his contributions to agriculture through the design and production of improved farm machines. Dr. E. R. Collins of North Carolina was elected general chairman for the coming year, H. R. Smalley, secretary

Plantfood Research Committee

The Plantfood Research Committee met on Monday evening, November 9th. Reports were presented by the several subcommittees and about two hours were devoted to discussion of post-war nitrogen utilization problems. Members of the Committee present were: J. B. Abbott, Charles J. Brand, H. C. Brewer, E. N. Carvel, S. D. Gray, S. B. Haskell, G. N. Hoffer, M. H. Lockwood, D. D. Long, H. B. Mann, Ward H. Sacks, H. B. Siems, chairman, H. R. Smalley, and A. M. Smith. Others present were: T. H. Bonner, Leroy Donald, Robert H. Engle, A. G. Floyd, G. L. Foster, Leroy Goble, E. M. Hansen, R. H. Lush, James MacBeth, Jr., F. W. Parker, V. Sauchelli, H. H. Tucker, J. J. Turrentine, and E. S. Valliant, Jr.

Post-War Nitrogen Problems

The Conference on Post-War Nitrogen Problems which was held on November 10th was attended by 116 agronomists representing all sections of the United States. R. M. Salter, chief of the Bureau of Plant Industry and chairman of the special committee that arranged the conference, presided, and H. R. Smalley served as secretary.

The character of the discussion will be indicated by the topics and speakers. The general topic was, "The service of abundant low-priced nitrogen to American agriculture and American life," discussed by R. M. Salter. "The utilization of nitrogen with non-legume cover crops for green manuring and erosion control" was discussed by R. W. Cummings of North Carolina, F. E. Bear of New Jersey, and T. S. Buie of the Soil Conservation Service. "The utilization of nitrogen with crop residues and mulches" was discussed by A. G. Norman of Iowa and F. L. Duley of Nebraska. "Use of nitrogen in

(Continued on page 20)

Parker Predicts Ample Fertilizer

American farmers will be able to get most of the fertilizer they need to meet crop production goals next year, Dr. Frank W. Parker, of the U. S. Department of Agriculture, said on November 12th, in a talk before the American Society of Agronomy meeting in St. Louis.

Dr. Parker, who is in charge of soil and fertilizer investigations in the Department, indicated there would be a record demand for fertilizers due to the great increase in the farm cash income for 1942. He predicted there would not be enough nitrogen to meet this demand but said there would be enough for essential requirements and to enable American farmers to meet crop production goals. Adequate supplies of both phosphate and potash were predicted.

The somewhat reduced supply of nitrogen fertilizer is the result of great increases in the use of synthetic ammonia for munitions and other war industries. The amount of nitrate of soda that can be imported from Chile is contingent on the ocean shipping situation.

The fertilizer situation has improved somewhat in recent months. The situation, of course, is subject to change due to the war but it now appears that American farmers in 1943 will use more phosphate and potash than they have ever used in any previous year. Nitrogen consumption, despite war conditions, is expected to be higher than in any year prior to 1941.

To aid in making the most efficient use of nitrogen and other plant foods next year the Department cooperated with the War Production Board and the Office of Price Administration to set up the following general principles for developing an equitable plan of fertilizer distribution:

1. Crops most essential to the war effort should have first call on our fertilizer nitrogen supplies.
2. Chemical nitrogen should not be used on non-essential crops, on some essential crops of which there was a very large surplus in storage, or under conditions where it gives a low return.
3. The consumption of phosphoric acid and potash should be increased to utilize most of our productive capacity and to partially offset the lower yield that would result from reduced nitrogen fertilization.
4. With the limitations indicated, nitrogen should be distributed on the basis of past usage.
5. It seems desirable from the standpoint of achieving production goals that nitrogen for agricultural uses be rationed to producers and that this can probably best be done through the same set-up that is now rationing farm machinery.

A committee of state and federal fertilizer specialists cooperated with the War Production Board, Office of Price Administration, and the fertilizer industry early in 1942 to standardize fertilizer grades as an aid in the distribution of fertilizers to farmers. Under this program the number of grades of fertilizer sold in the United States will be reduced from about 900 to 90.

Little Change in November Crop Figures

The figures issued by the Crop Reporting Board of the U. S. Department of Agriculture for crops on November 1st show little change from the October totals. Increased amounts of corn, soybeans, tobacco, sugar cane and sugar beets are recorded, while rice and peanuts show relatively slight decline.

The estimates of corn production have been raised 2 per cent to a new high of 3,185,000,000 bushels. This year Ohio, Indiana and Illinois are expected to have yields of 54 to 55 bushels per acre and in Iowa the yield is expected to reach 61 bushels. Before 1939, no State ever reached the 50-bushel level.

Soybeans increased 5 per cent to 210,000,000 bushels, which is nearly twice the output in any past season. Peanuts showed a decrease of 4 per cent during October but the crop of 2.8 billion pounds is almost double the 1941 crop and over 2½ times as large as the 1930–39 average. Tobacco showed an increase of 13 million pounds, and sugar cane and sugar beets increases of 290,000 and 180,000 tons respectively. Rice, which dropped 1½ million bushels or 2 per cent, is still 30 per cent higher than last year.

Decision Rendered on Florida Fertilizer Tax

After a hearing on October 26th, a three-judge Federal Court at Tallahassee, Florida, issued an order permanently enjoining Florida officials from collecting the fertilizer inspection tax of 25 cents per ton, on any fertilizer shipped into the State under the AAA farm benefit payment program. It is understood that the Florida officials will appeal this decision in the higher courts.

The Importance of the Fertilizer and Feed Salesman in War Production

By F. D. JACKSON
President, Jackson Grain Co., Tampa, Fla.

Through the press we are informed the Government will ration automobile passenger car mileage under a new program beginning November 22nd. We are advised the new program may severely limit the automobile mileage for the use of service and salesmen.

We are not sufficiently informed regarding many industries throughout the country to speak for them, but because of our intimate knowledge of the subject, we feel qualified to speak regarding the duties performed by service and salesmen representing feed, fertilizer and insecticide industries. By reason of custom and practice in Florida, and we believe in many other sections, the average dirt farmer producing basic crops of fruits, vegetables, meat, milk and eggs, has come to depend on this group of men for most of his advice and assistance on problems of agronomy, entomology, animal husbandry, and kindred technical subjects. We believe it would be impossible for the limited staff of any of the Governmental agencies to cover the ground now necessary to render the individual and personal service and advice required by producers of basic food commodities. The days of the old-fashioned salesman or drummer have long since passed. The salesman in the feed, fertilizer and agricultural industries has become totally dependent for his success on his ability to render service of value to growers and agricultural producers, and he must be well educated, experienced and capable.

We feel certain if severe restrictions are imposed in the use of automobiles for sales and service men representing the feed, fertilizer and agricultural chemical industry, there will be a substantial drop in the production of essential fruits, vegetables, poultry and eggs, and other necessary specialized production, and that there will be some curtailment in the production of beef and pork. A few of the reasons for this conclusion are stated as follows:

1. Feed and fertilizer service and salesmen are largely composed of experienced, carefully trained experts. Many of them are agronomists, entomologists, pathologists, animal husbandrymen, and poultry experts.

2. Feed and fertilizer service and salesmen gather and disseminate trade information, and the producers have learned to depend upon them for this service. Through their frequent and wide contacts, they are in a unique position to render this service to farmers and producers more quickly and more effectively than through any other channel. These men in their travels learn of practices of efficiency and improvement in one section and transmit the information throughout the whole national territory without lost motion so that improvements and innovations are rapidly passed on to the humblest producer.

3. These men constitute a vital cog in the processes of education in the trade. They disseminate technical information in words of one syllable to a huge total of less educated farmer producers.

4. These men promote the use of new products as quickly as they become commercially feasible, and thus increase production.

5. In order to conserve transportation and to make effective ODT regulations, a vast group of farmers need help and education. Sales and service men can and will help them change their habits with respect to ordering materials and will help in the national effort to increase the maximum carload requirements and the 100 per cent loading of trucks. They will assist individual growers and farmers to pool their orders for orderly shipment in quantities designated by ODT.

6. One salesman recently found a poultryman who for personal reasons was quitting business and was preparing to sell his hens for slaughter. The salesman arranged for and disposed of the birds at a satisfactory price to another poultryman, and kept the hens in egg production. Numerous salesmen are supervising several flocks belonging to customers who had produced eggs for eating purposes only, but with this supervision are now competent to produce hatching eggs. Alertness of service and salesmen is directly

(Continued on page 22)

THE AMERICAN FERTILIZER
ESTABLISHED 1894
PUBLISHED EVERY OTHER SATURDAY BY
WARE BROS. COMPANY
1330 VINE STREET, PHILADELPHIA, PA.

A MAGAZINE INTERNATIONAL IN SCOPE AND CIRCULATION DEVOTED EXCLUSIVELY TO THE COMMERCIAL FERTILIZER INDUSTRY AND ITS ALLIED INDUSTRIES

PIONEER JOURNAL OF THE FERTILIZER INDUSTRY

WARE BROS. COMPANY
PUBLISHERS
1330 VINE STREET PHILADELPHIA, PA.
A. A. WARE, EDITOR

ANNUAL SUBSCRIPTION RATES

U. S. and its possessions, also Cuba and Panama	$3.00
Canada and Mexico	4.00
Other Foreign Countries	5.00
Single Copy	.25
Back Numbers	.50

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Vol. 97 DECEMBER 7, 1942 No. 11

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Difficulties Face Growers of Less Essential Vegetables

In order that farmers may make the most intelligent adjustments possible in their plans for producing winter vegetables, Claude R. Wickard, Chairman of the Foods Requirements Committee, has elaborated the statement of October 14th that the Department of Agriculture "could not assist with production or marketing of the less essential winter vegetable crops." The list of the less essential winter vegetable crops includes cantaloupes, cucumbers, cauliflower, eggplant, watermelons, bleached celery, head lettuce, green peppers, asparagus and artichokes. The maximum suggested acreages of these less essential vegetables, approved by the Foods Requirements Committee, have been forwarded to the State U. S. D. A. War Boards with the suggestion that they be broken down by counties. The State War Boards are now being advised to release these suggested acreages in terms of the maximum percentage of last year's acreage.

In general, the maximum suggested acreages for the less essential vegetable crops range on a national basis from 70 to 85 per cent of 1942, but farmers planning to grow these crops should take into account the following facts:

1. The Department of Agriculture will not undertake to furnish labor for their production and will not pay the transportation of either domestic or Mexican workers to be employed for this purpose. Furthermore, its policy will be aimed at using all labor available locally for production of the more essential crops, even at the expense of the less essential crops.

2. If the transportation situation or supplies of packaging materials become so critical that priorities will have to be established, as may well be the case, the Department will recommend that the more essential crops be given a sufficiently high rating to be assured of receiving transportation and packaging materials, and that the less essential crops be rated sufficiently low so as to permit transportation and packaging materials for them only after provisions have been made for all the needs of the more essential crops.

3. Since the supplies of nitrogen fertilizer seen likely to be materially less than would be needed to meet all demands, it will be necessary to reduce greatly the supplies available for less essential crops. The use of nitrogen fertilizer for this purpose may well be cut to 50 per cent of 1942.

At the same time, Chairman Wickard announced that broccoli should be added to the list of crops for which it is desired that the acreage be maintained. He also pointed out that in listing asparagus and artichokes as less essential crops, it was not suggested that widespread plowing up of producing plantings be made, but advises great caution in the establishment of new plantings.

Rise in Fertilizer Price Ceiling Expected

Present price ceilings on fertilizer—frozen at February 16–20, 1942, levels may be raised by approximately eight per cent shortly to cover increased costs of nitrogen and transportation since that base period, the Office of Price Administration announced on November 6th.

A new price regulation, effecting this adjustment by fertilizer production areas according to the increased costs in each area, probably will be issued within the next four to five weeks.

The fertilizer industry now is covered by Maximum Price Regulation No. 135 for mixed fertilizer, superphosphate and potash sold at retail; Maximum Price Regulation No. 108 for nitrate of soda, sulphate of ammonia and cyanamide at retail; and the General Maximum Price Regulation, whose March, 1942, ceilings apply to sales of other fertilizers at retail. The General Maximum Price Regulation also covers all wholesale transactions for fertilizers and materials—except sulphate of ammonia. Wholesale prices of the latter are controlled by Maximum Price Regulation No. 205.

Allocation of low-priced sources of chemical nitrogen to war industries subjects the fertilizer industry to additional expense in turning to substitutes, such as oilseed meals, for essential nitrogen. Advance disclosure of the proposed price adjustment is made to encourage fertilizer manufacturers to proceed with mixing operations, using all available sources of nitrogen. Thus, the 1942 output of essential food, feed and fiber crops will not be limited by a fertilizer shortage.

The fertilizer price adjustment will raise farmer-user cost, but will be reflected in larger commodity yields and thus increase income from his farm produce.

The fertilizer selling season gets under way in Florida and the Gulf Coast area in November. It moves northward in season and continues in each area for a period of about three months.

Changeover from water to rail transportation due to war conditions, plus the increase in rail freight rates is felt keenly by the fertilizer industry on sulphur hauls from Texas and phosphate rock from Florida, as well as on shipments of mixed fertilizers from large port plants.

Synthetic nitrogen solutions—the industry's least expensive source of nitrogen—have been taken from fertilizers and diverted to the direct war effort. Consequently, it has become necessary to obtain nitrogen from other sources, so far as possible. The expected oilseed meal output is greater than the normal requirement for livestock feeding. Ordinarily, seed meals are too expensive for extensive fertilizer use. However, the present nitrogen shortage justified the action being taken to enable farmers to obtain some plant food from this available source.

Restrictions on Use of Fertilizer Bags

Under date of November 2nd, the War Production Board issued three orders relating to the use of textile bags. These are a revision of Order M–47 covering burlap and burlap products, a revision of Order M–107 covering cotton bags, and a new Order M–221 restricting the use and distribution of cotton and burlap bags. This latter order expires 60 days after date of issuance.

Under these orders any burlap bags, new or used, which were on hand November 2nd may be used for shipping fertilizers. Used bags acquired after November 2nd may also be used for this purpose but no new bags may be so used if acquired after November 2nd unless special permission is given by WPB.

Cotton bags, new or used, whether acquired before or after November 2nd, may be used for fertilizers.

New or used textile bags may not be used by any manufacturer for making sand bags for defense against air raids.

To prevent excessive accumulation of empty bags, persons who acquire more than 400 used textile bags in any one of the past six months, through removing their contents, must use or dispose of an equal number within 60 days.

No restrictions are placed on the use of paper bags by these orders.

October Tag Sales

Fertilizer tax tag sales in October in the 17 reporting States were 21 per cent above October 1941. Total fall sales, in August, September and October, were 17 per cent larger this year than last.

Increases over last year took place in October in both the southern and midwestern regions. In the South, substantial increases were reported by the Carolinas, Georgia, and Louisiana. The 50 per cent increase in the Midwest over October of last year was due to a sharp increase in sales in Indiana.

Total sales in the first 10 months of this year amounted to 5,590,000 tons, a new peak for the January-October period. Sales were 2 per cent larger than last year and 7 per cent larger than two years ago. It seems likely that aggregate tonnage in States other than the tag sale States has shown a somewhat larger increase this year than have tag sales, and that fertilizer consumption in the entire country is the largest on record.

Fertilizer Profits Increased in 1941

In a report prepared by the Securities and Exchange Commission, the returns from five fertilizer companies showed net sales of $84,500,000 during 1941. Net profits after all charges were 4.6 per cent of sales which gave a net return on capital invested of 3.9 per cent. In 1940 the same companies showed sales of $75,100,000 with net profit of 3.4 per cent on sales and of 2.6 per cent on investment. In contrast, net profits of 38 large chemical companies declined from 16.7 per cent in 1940 to 12.7 per cent of sales after all charges had been deducted.

Hybrid Corn Increases Yield

The U. S. Department of Agriculture estimates that the use of hybrid corn on 45 per cent of the corn acreage during 1942 has increased the total crop by 300 million bushels, enough to produce about 3⅓ billion pounds of pork.

FERTILIZER TAX TAG SALES

STATE	OCTOBER				JANUARY-OCTOBER			
	1942		1941	1940	1942		1941	1940
	% '41	Tons	Tons	Tons	% '41	Tons	Tons	Tons
Virginia	98	21,299	21,745	28,841	103	395,538	383,939	381,228
N. Carolina	122	30,496	25,088	22,267	106	1,106,760	1,039,961	1,018,712
S. Carolina	258	17,770	6,875	13,169	93	639,964	684,462	656,653
Georgia	219	27,843	12,740	10,004	101	775,311	764,374	728,123
Florida	86	57,501	66,533	65,784	102	510,639	500,049	448,148
Alabama	67	4,500	6,750	4,250	99	564,200	571,750	570,550
Mississippi	137	12,590	9,175	10,393	92	304,619	332,792	304,688
Tennessee	111	13,443	12,103	16,347	123	173,186	140,441	146,238
Arkansas	...	0	1,100	5,000	117	133,158	114,200	98,950
Louisiana	318	12,730	4,000	7,544	95	155,716	164,510	149,975
Texas	96	1,990	2,075	5,145	91	119,284	131,301	114,984
Oklahoma	...	0	350	55	80	8,747	10,950	6,663
Total South	119	200,162	168,534	188,799	101	4,887,122	4,838.729	4,624,912
Indiana	470	10,923	2,323	3,031	118	396,027	334,860	302,381
Illinois	97	1,893	1,947	3,313	130	80,089	61,555	51,073
Kentucky	98	7,735	7,864	7,706	118	144,087	121,976	122,590
Missouri	126	873	695	2,895	82	70,797	86,734	87,494
Kansas	...	50	1,225	825	60	11,415	19,011	17,496
Total Midwest	153	21,474	14,054	17,770	113	702,415	624,136	581,034
Grand Total	121	221,636	182,588	206,569	102	5,589,537	5,462,865	5,205,946

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FERTILIZER MATERIALS MARKET

NEW YORK

No Change in Chemical Nitrogen Situation. Exports of Potash Not Expected to Curtail Local Deliveries. Greater Demands for Superphosphate Expected

Exclusive Correspondence to "The American Fertilizer"

NEW YORK, November 17, 1942.

Sulphate of Ammonia

There have been some additional allocations to Midwest points but, in general, there has been no change in the sulphate of ammonia situation.

Nitrate of Soda

Chilean Sales Corporation has announced their November price, no change against previous quotation, and deliveries of this material are being made, as heretofore, only against allocation.

Potash

The situation continues the same in this material and although it has been intimated by several of the larger manufacturers that they still have ample quantities of manure salts for sale, it is believed that all manufacturers have sold their productions of potash through March, 1943. Undoubtedly, fairly large quantities of muriate will be exported but, in general, it is believed that this country will be fairly well taken care of as far as potash requirements are concerned.

Oil Meals

Even with the establishments of ceilings on various meals, the differential in the cost of their ammonia content against the cost of inorganic ammonia is such that they cannot be used generally unless ceilings on mixed fertilizers are raised. It is expected that there will be some definite action taken in this regard before long.

Fish Meal

This situation remains the same, supplies being extremely scarce with no possibility of contracts being filled.

Superphosphate

This situation remains unchanged but it is felt that before long there will be additional demands for this commodity, due to the shortage of high test triple superphosphate. With large quantities of this high test material being exported, deliveries are being curtailed to domestic users and this situation will certainly continue for at least six months. Conditions after March will be dependent on whether exports continue.

BALTIMORE

Higher Cost of Vegetable Meals Favors Increase in Mixed Fertilizer Ceiling. Fish Tonnage Greatly Below Contracts Taken

Exclusive Correspondence to "The American Fertilizer"

BALTIMORE, November 17, 1942.

It is anticipated that the Government, knowing the added cost of complete fertilizer on account of shortage of liquid and mineral ammonia, the larger portion of which is now being used for National Defense purposes, has come to realize that fertilizer manufacturers are entitled to better prices for their finished goods, especially where it has been necessary to derive part of the nitrogen from vegetable meals.

Organic Ammoniates.—As far as the market on feeding material is concerned buyers are in position to pay ceiling prices and still market finished feeds at a profit, even though small. However, whenever fertilizer manufacturers are compelled to pay for ammoniates on the basis of prices paid by feed manufacturers, the additional cost is quite considerable and must be reflected in the selling price to the complete fertilizer; otherwise business could only be done at a loss and any curtailment in the manufacture of fertilizer would be most unfortunate during the coming season with world war conditions as they are. With ceiling prices in effect on tankage and blood, manufacturers are not selling ahead, with the result that the market is

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quiet and only occasional sales reported at ceiling prices.

Nitrogenous Material.—With reduced production due first to the scarcity of raw materials and secondly to the destruction by fire of one of the largest producing plants in this country, offerings are at a minimum.

Vegetable Meals.—While ceiling price has now been placed on cottonseed meal, soya bean meal and castor meal, producers are well sold up and in most cases not disposed to book too far ahead.

Sulphate of Ammonia.—Although fertilizer manufacturers had anticipated increased allocations, up to the present time the quantity available to fertilizer manufacturers has been less than last year, with the result that there will be a very decided shortage of nitrogen in mixed goods, although this may be alleviated to a great extent by corresponding increase in selling price to offset additional cost of nitrogen derived from vegetable meals.

Nitrate of Soda.—The Government has now taken complete charge of allocations which became necessary when OPA decided not to permit increased selling prices, with freight rates ruling considerably higher than last year on the foreign product. The Government has, therefore, practically subsidized the importation of nitrate of soda, and has taken over entirely the allocation of tonnage to the various fertilizer manufacturers and other buyers. The market for November continues unchanged.

Fish Scrap.—Fishing has now come to an end on the Chesapeake Bay and it is rumored that more than half of tonnage sold under contracts made on "if and when made basis" is undelivered, due to poor catch. Up to the present time the OPA has not permitted any increased margin between raw material and fish meal, even though it has been clearly demonstrated that no dealer could operate on the prevailing margin, with the result that business is practically at a standstill on fish meal at the present time.

Superphosphate.—The demand for sulphuric acid for defense purposes continues heavy. The market on superphosphate is ceilinged on the basis of $9.60 per ton of 2,000 lb., basis 16 per cent, for run-of-pile, f. o. b., producers' works, Baltimore, and for economic reasons the Government will not permit shipment of superphosphate containing less than 18 per cent A. P. A.

Bone Meal.—Offerings continue very light with inquiries practically nil.

Potash.—There is no change in the situation and, as previously reported, all domestic producers are well sold up. Unless fertilizer manufacturers use increased quantities of potash in their mixtures due to the scarcity of nitrogen, there should be ample tonnage to supply normal requirements. There are no resales on the market, and it is doubtful whether any manufacturer will take the chance of reselling under present conditions.

Bags.—Burlap continues in short supply, and it is anticipated there are still large quantities of sand bags to be ordered. In fact, some agencies are now figuring on using sand bags made from cotton. The price on plain, new, 2.05 Osnaburg bags, basis 40 cut 54 in., is about $280.00 per thousand, f. o. b., basis Baltimore.

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CHARLESTON

Large Convention Attendance Expected. Shortage of Organic Nitrogen Materials Experienced in All Times

Exclusive Correspondence to "The American Fertilizer"

CHARLESTON, November 16, 1942.

A large attendance is expected at the Fertilizer Convention at Atlanta as the manufacturers are hoping they will get more definite information as to the 8 per cent rise in mixed goods prices which it is reported OPA will approve.

Nitrogenous.—Producers of this material are still refusing to quote.

Castor Meal.—In spite of the arrival of limited amounts of castor beans, the shortage of castor meal is not relieved.

Blood.—No blood is apparently going to fertilizer manufacturers but only to feed producers. Last quotation was around $5.38 per unit of ammonia ($6.54 per unit N), f. o. b., Chicago.

Cottonseed Meal.—Nearby offerings are hard to obtain. Nominal quotations for the 8 per cent grade are: $35.60, Atlanta; $39.00, Memphis.

CHICAGO

Fertilizer Organics Market Quiet with No New Offerings in Evidence. Feed Materials also Scarce

Exclusive Correspondence to "The American Fertilizer"

CHICAGO, November 16, 1942.

The western organic market is rather featureless. No new offerings have appeared on the market, while buying interest is still in evidence. The probability of advancing ceiling prices on commercial fertilizer containing vegetable meals seemingly will not affect the market of other organics.

Scarcity of supplies restricts sales of meat scrap and digester, for which the demand is keen. Producers are of necessity allotting their output to the trade.

Nominal prices remain at the ceiling as follows: High grade ground fertilizer tankage, $3.85 to $4.00 ($4.68 to $4.98½ per unit N) and 10 cents; standard grades crushed feeding tankage; $5.53 per unit ammonia ($6.72 per unit N); blood, $5.38 ($6.54 per unit N); dry rendered tankage, $1.21½ per unit of protein, Chicago basis.

THE ATLANTA CONVENTION

(Continued from page 7)

it possible for the farmer to purchase a grade of fertilizer which will take care of his plant food requirements for 1943.

"As can be anticipated, the Land-Grant Colleges will assist in carrying out the details of any plan to see that fertilizer is wisely used. It should be emphasized that the entire effort on the part of the War Production Board and the U. S. Department of Agriculture in developing plans for the satisfactory distribution of chemical nitrogen has been directed toward the maintenance of crop production. There has been a real appreciation of the importance of fertilizers in what Secretary of Agriculture Wickard has described as the 'Green Battle' of food production. Everyone concerned with the fertilizer industry must cooperate to the end that no farmer will be limited because of lack of fertilizer in doing his part in the winning of this epic battle."

R. B. Douglass of Norfolk, Va., chairman of a special industry committee on fertilizer distribution, outlined a plan prepared by that committee, and approved by the Fertilizer Industry Advisory Committee, for equitable distribution of fertilizer and fertilizer materials during 1943. In accordance with this plan, mixed fertilizers and fertilizer materials

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will be distributed largely in accordance with past usage, except that in some areas special consideration will be given to the production of crops that are badly needed. It is expected that the total tonnage of mixed fertilizers distributed next year will be equal to last year's tonnage, out of a somewhat lower average nitrogen content. The plan calls for the full cooperation of manufacturers, salesmen, dealers and agents, agricultural workers, and of the war agencies. Other members of the special committee, who assisted Mr. Douglass in answering questions raised by manufacturers, were: M. K. Derrick of Washington, D. C.; L. D. Hand of Pelham, Ga.; W. S. Rupp of Baltimore, Md.; and John E. Sanford of Atlanta, Ga. It is expected that the War Production Board will give effect to the plan by publishing an Order and by placing representatives in the field to work with farmers, County USDA War Boards, and fertilizer manufacturers.

It was brought out that there was considerable educational work to be done by the industry to get the agents, dealers and retailers to understand how to make out forms for reporting all transactions. But an inquiry as to whether gasoline would be allowed to solicit business brought forth that trips of this nature by automobile would not be allowed; if, however, the local rationing boards could be convinced that trips were needed to put the new methods of distribution of fertilizers into effect, consideration might be given traveling with the educational purpose in view.

AGRONOMISTS MEET IN ST. LOUIS

(Continued from page 9)

the production of corn and small grains" was handled by Randall Jones of Alabama and Geo. D. Scarseth of Indiana. Dr. O. S. Aamodt of the Bureau of Plant Industry discussed, "Breeding crops for production at high fertility levels," and S. B. Haskell spoke on, "Nitrogen in the production of pastures and hay." "Problems of balance, crop composition, and quality with heavy nitrogen fertilization," was discussed by H. H. Zimmerley of Virginia and J. H. Gourley of Ohio; and J. C. McAmis of the Tennessee Valley Authority spoke on, "The value of farm unit trials on nitrogen utilization."

Later in the evening the official members of the National Joint Committee on Nitrogen Utilization met and completed the organization by electing R. M. Salter chairman and H. R. Smalley secretary. As soon as possible several subcommittees will be appointed to work on specific problems.

Committee on Fertilizers

The Committee on Fertilizers of the American Society of Agronomy met on November 10th. Reports were presented by the Subcommittees on Fertilizer Reaction, Fertilizer Ratios, Fertilizer Application and Diagnosis of Nutrient Status in Plants. The Subcommittee on Fertilizer Reaction, having completed its work, was discharged. The Subcommittee on Fertilizer Ratios was asked to study the lists of grades adopted by WPB Order No. M–231 to see what changes may need to be made next year, also following the war. The Subcommittee on Diagnosis presented some case histories to show how soil and plant tissue tests can be used as a guide in making fertilizer recommendations. Most of the agronomists who attended the Nitrogen Conference also attended this meeting.

N. F. A. Dinner to Agronomists

The annual dinner which the National Fertilizer Association gives to agronomists, cooperators, and friends was given at the Statler Hotel on Tuesday evening, November 10th. The guests numbered 130 and they came from all sections of the country to attend the series of committee meetings that preceded the dinner. Dr. H. B. Siems, chairman of the Plantfood Research Committee, and H. R. Smalley were co-toastmasters. Mr. Smalley introduced a few prominent guests, including Dr. Richard Bradfield, president, Dr. F. D. Keim, vice-president and president-elect, and Dr. G. G. Pohlman, secretary-treasurer of the American Society of Agronomy; Robert M. Salter, chief of the Bureau of Plant Industry and chairman of the Committee on Fertilizers; Fred H. Bate-

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Wilmington, N. C.

man, general chairman of the National Joint Committee on Fertilizer Application; Dr. Horace Harper, president of the Soil Science Society; and Dr. F. W. Parker, chief of the Division of Soil and Fertilizer Investigations, USDA. Dr. Siems then introduced S. B. Haskell who spoke briefly on the nitrogen situation; Dr. J. W. Turrentine who spoke on potash; and Mr. Brand who disdussed superphosphate and mixed fertilizers. The program closed with a showing of "The Life of the Soil."

THE IMPORTANCE OF THE FERTILIZER AND FEED SALESMAN

(Continued from page 11)

responsible for these innovations which help relieve the shortage of hatching eggs, and they also originate many other helpful programs.

7. Sales and service men in their travels help poultrymen locate proper type of birds for breeding, and provide for proper interchange. They also cull flocks, lay out poultry yards, diagnose disease, and give sound advice.

8. It is found in practice that few growers of fruit and vegetables, and few dairymen and poultrymen voluntarily change to new and more efficient programs. The new plans sometimes cost more in total money expenditure but in the actual cost of unit production are vitally economical. Sales and service men, by traveling around checking what is being done by more efficient producers, quickly transmit this knowledge to less progressive producers, and thus increase production and decrease costs.

9. Many agricultural producers are not served by busses or other forms of commercial transportation and do not have telephones. Service by mail is impractical because these growers need personal advice and service. The sales and service men also help overcome the handicap of small users by assembling and pooling tonnage so it will move economically.

10. These men assist their clients in finding the most profitable and available markets. In the case of small growers, this is a vital service to keep them in production.

11. In the production of specialized crops of vegetables, citrus fruits, etc., the success of the operation depends largely on the proper technical procedure. As to fertilization and insect control, the needs vary widely each season because of weather conditions. Many of the growers throughout the country where specialized production is featured depend on the staff of highly trained specialists who service them. Should the personal service not be continued, there would be a severe curtailment in production.

12. The feeding program of the average poultryman and dairyman has become a technical procedure. Because of the depletion in farm soils of many essential elements, the grains and feeds in many instances do not contain essential elements which must be added by the proper blend of supplements. The assistance of the service men is vital with respect to this problem.

13. Because of soil depletion and unstable and changing weather conditions, the grower is faced with a serious problem with reference to his fertilizer program and depends on fertilizer service and salesmen for advice concerning his fertilizer problems. The service man makes recommendations to each individual producer in accordance with his specific requirements. Many farmers are unable to render this service for themselves.

14. The Government is limiting and allocating to fertilizer manufacturers all chemical nitrogen that may be used for fertilizer purposes. In order that this chemical nitrogen may be fairly and equitably distributed to individual farmers in accordance with their essential needs, it is necessary for fertilizer sales and service men to personally inspect the premises of the growers at reasonable intervals to see to it that one grower does not get more than his share of nitrogen, thereby depriving other growers of their requirements.

To sum the situation up—we all desire to cooperate fully in the economic use of automobile tires and gasoline, but it is equally important to maintain efficient agricultural production. To do this, the services of the field men of feed and fertilizer manufacturers and distributors are necessary. This being true, it is in the national interest that they should be allocated sufficient automobile mileage to function efficiently.

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Agricultural authorities have shown that a lack of Boron in the soil can result in deficiency diseases which seriously impair the yield and quality of crops.

When Boron deficiencies are found, follow the recommendations of local County Agents or State Experiment Stations.

Information and references available on request.

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See Page 4

WPB Makes Recommendations on Fertilizer Distribution

On November 13th, the Fertilizer Industry Advisory Committee received a letter from T. E. Milliman, Chief of the Agricultural Chemicals Unit, War Production Board, expressing approval of the Grade Substitution Plan recommended by the Committee. (This was first printed in the November 7th issue of THE AMERICAN FERTILIZER.) Mr. Milliman also urged that fertilizer manufacturers withhold from sale for the present all fertilizers containing chemical nitrogen, except for immediate use. On November 14th, an order was issued extending to December 1st the prohibition against delivery of nitrogen fertilizers. The text of Mr. Milliman's letter is as follows:

November 13, 1942.

TO MEMBERS OF THE FERTILIZER INDUSTRY ADVISORY COMMITTEE:

Again I find it necessary, in all fairness, to thank Messrs. Ralph B. Douglass, Larabee D. Hand, Walter S. Rupp, John E. Sanford and M. E. Derrick for their supplementary report of recommendations on distribution of nitrate of soda and other nitrogen materials. This report is being given careful study by WPB. Copies of it have been sent to the U. S. Department of Agriculture and the Office of Price Administration.

The main report of the Committee on Recommendations for Fertilizer Distribution, previously submitted and unanimously approved by the Fertilizer Industry Advisory Committee, was made available immediately to both the U. S. Department of Agriculture and the Office of Price Administration. In addition, I requested the National Fertilizer Association to release the report, including the grade substitution proposals, to all members of the Industry.

A few supplemental provisions are now being prepared as amendments to WPB Conservation Order No. M-231, but these do not include the grade substitution plan. The list of grades contained in the Order remains the same except that in a few instances one or more grades are being added. The grade substitution plan, of which all members of the Industry have had copies, is, in the opinion of all in the Government with whom I have talked, a good working guide for all members of the Industry, large and small. As a measure of constructive guidance, I recommend that the grade substitution plan be placed in the hands of all fertilizer dealers and agents by fertilizer manufacturers. This plan is, of course, based upon the use of approved 1943 grades only. It is, when followed, a potent and automatic nitrogen saver working in the interests of adequate distribution within the slightly restricted supply of chemical nitrogen. It is a protection to all farmers, especially the small farmer and those who may wait until spring to look after their fertilizer requirements. Slight changes have been made in the grade substitution schedules of one or two states, and manufacturers will be informed as to these changes.

In the interest of equitable distribution and efficient use of nitrogen, it is recommended that manufacturers utilize their chemical nitrogen in accordance with instructions in allocations made by the Nitrogen Unit of WPB as to use in mixed fertilizers or for sale as straight materials. It is further recommended that each manufacturer, in the mixing of approved grades, follow the traditional pattern of grades containing high, medium and low percentages of nitrogen.

One manufacturer has submitted for our approval forms which he intends to have his dealers use when accepting fertilizer orders from farmers. The forms submitted were slightly more elaborate than those proposed by the Sub-Committee on Recommendations for Fertilizer Distribution, and are entirely acceptable to us. It is not necessary for manufacturers to submit such forms for approval by WPB. We regard the forms suggested by your Committee as an adequate minimum, and would invite manufacturers to either copy them or elaborate upon them for even more complete information. We shall not, bowever, refuse to express our ideas upon any forms which fertilizer people care to submit to us.

It is possible that some complete fertilizer will move out for 1943 use somewhat later in

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1942. Let everyone—manufacturers, dealers, and agents—remember the obligation which the Industry has assumed to make available adequate supplies of complete fertilizer for the more vital food crops, including the needs of old customers and those farmers who may not heretofore have grown such crops or used fertilizer upon them.

Three branches of Government will be greatly accommodated by the withholding from sale to farmers for the time being of all fertilizer containing chemical nitrogen, except for immediate use. The U. S. Department of Agriculture will thus have more time in which to complete farm production goals, the Office of Price Administration more time for price action, including seed meals, and the War Production Board a little more needed time in which to complete amendments to Conservation Order M–231.

All parts of the Industry, including large, medium and small suppliers, both private and cooperative, have exhibited great willingness to work with the Government in the interests of the needs of all farmers.

Very truly yours,

T. E. MILLIMAN,
Chief, Agricultural Chemicals Unit,
War Production Board.

Experiment Station Vegetable Trials Show How to Surmount Nitrogen Shortage

Vegetables, more than any other Connecticut crop, will feel the pinch of the new WPB ruling curtailing the use of fertilizer nitrogen. Requiring intensive cultivation, they must absorb large quantities of nitrogen in order to give good yields and high quality. Though it will be necessary to use commercial fertilizer with a reduced quantity of nitrogen, the farmer will find that his vegetables can get along on much less inorganic nitrogen than is customarily used, says H. G. M. Jacobson of the Connecticut Agricultural Station at New Haven.

Over a ten-year period, ending in 1939, extensive experiments in vegetable growing were conducted at Windsor by the Experiment Station. Data from these trials, presented as Bulletin 439, will be of special interest to farmers during the present shortages. The trials included experiments with manures lime and crop rotations, as well as reduced applications of inorganic nitrogen.

It has been customary for vegetable growers to use fertilizer mixtures high in nitrogen. With commercial fertilizers now totaling only 12 in Connecticut, grades such as the 6–6–8 for sandy soil and the 5–8–7 for heavier soil are "out" for the duration. What can the farmer do in the face of this reduction, and how large a yield can he expect? The experiments at Windsor show that reducing the nitrogen by half cut the yield of spinach, onion sets, sweet potatoes and peppers only 10 per cent. The standard used in the trial was 1,500 pounds of 6–6–8 per acre, and the reduced application was 1,500 pounds of a 3–6–8. Other vegetables showed promising reactions to less nitrogen. Early carrots, sweet corn, cobbler potatoes and tomatoes produced over 80 per cent, while lettuce, radishes, early beets and spinach produced over 70 per cent yields, compared with the checks in this trial. Actually, the grades available for use on these vegetables the coming season are 4–9–7, 4–10–10, 6–15–15, 3–12–6, 5–20–10 and 4–12–4.

Manure makes a good addition to commercial formulas containing reduced nitrogen. When 750 pounds per acre of a 6–6–8 fertilizer was supplemented with 20 tons of manure, all the crops mentioned except radishes and early beets outyielded plots receiving 1,500 pounds of this fertilizer formula without manure. Fifteen hundred pounds per acre of a 3–12–6 fertilizer, which is permitted by the WPB ruling, has nitrogen equivalent to that in 750 pounds of the 6–6–8 mixture used in the experiment. Thus, by supplementing with manure 1,500 pounds per acre of a 3–12–6 fertilizer, the grower may expect high yields from most commonly grown vegetables.

Experimental work shows that there are several ways of stretching commercial fertilizers. As aids to their conservation and efficient use during wartime, Mr. Jacobson suggests the following points to vegetable growers:

1. Use a minimum amount of commercial fertilizer for each crop grown.

2. Top dress with a fertilizer when needed, particularly after excessive leaching rains.

3. Apply fertilizers by the hill, row or band method rather than broadcast.

4. Use green manure and winter cover crops to conserve residual fertilizer and keep up the humus content of the soil.

5. Occasionally disc instead of plow to keep the humus and richer portion of the soil closer to the surface. Plowing, especially deep plowing under of organic matter, tends to facilitate leaching of plant nutrients from the lighter or sandy soils.

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BUYERS' GUIDE • A CLASSIFIED INDEX TO ALL THE ADVERTISERS IN "THE AMERICAN FERTILIZER"

This list contains representative concerns in the Commercial Fertilizer Industry, including fertilizer manufacturers, machinery and equipment manufacturers, dealers in and manufacturers of commercial fertilizer materials and supplies, brokers, chemists, etc.
For Alphabetical List of Advertisers, see page 33.

ACID BRICK
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.

ACID EGGS
Chemical Construction Corp., New York City.

ACIDULATING UNITS
Chemical Construction Corp., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.

AMMO-PHOS
American Cyanamid Co., New York City.

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Barrett Division, The, Allied Chemical & Dye Corp., New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.
Hydrocarbon Products Co., New York City.

AMMONIA LIQUOR
Barrett Division, The, Allied Chemical & Dye Corp., New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.
Hydrocarbon Products Co., New York City.

AMMONIA OXIDATION UNITS
Chemical Construction Corp., New York City.

AMMONIATING EQUIPMENT
Sackett & Sons Co., The A. J., Baltimore, Md.

AMMONIUM NITRATE SOLUTIONS
Barrett Division, The, Allied Chemical & Dye Corp., New York City.

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Sackett & Sons Co., The A. J., Baltimore, Md.

BABBITT
Sackett & Sons Co., The A. J., Baltimore, Md.

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Bagpak, Inc., New York City.
Bemis Bro. Bag Co., St. Louis, Mo.
St. Regis Paper Co., New York City.

BAGS—Cotton
Bemis Bro. Bag Co., St. Louis, Mo.

BAGS—Paper
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BAGS (Waterproof)—Manufacturers
Bemis Bro. Bag Co., St. Louis, Mo.
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Wellmann, William E., Baltimore, Md.

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BAG PILERS
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BEARINGS
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Sackett & Sons Co., The A. J., Baltimore, Md.

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Link-Belt Company, Philadelphia, Chicago.
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Stedman's Foundry and Mach. Works, Aurora, Ind.

BELTING—Leather, Rubber, Canvas
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American Agricultural Chemical Co., New York City.
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Huber & Company, New York City.
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Huber & Company, New York City.
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Stedman's Foundry and Mach. Works, Aurora, Ind.

A Classified Index to Advertisers in "The American Fertilizer"

BUYERS' GUIDE

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BUCKETS—For Hoists, Cranes, etc., Clam Shell, Orange Peel, Drag Line, Special; Electrically Operated and Multi Power
Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.

BURNERS—Sulphur
Chemical Construction Corp., New York City.

BURNERS—Oil
Monarch Mfg. Works, Inc., Philadelphia, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.

CABLEWAYS
Hayward Company, The, New York City.

CARBONATE OF AMMONIA
American Agricultural Chemical Co., New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.

CARS—For Moving Materials
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CARTS—Fertilizer, Standard and Roller Bearing
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.

CASTINGS—Acid Resisting
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Duriron Co., Inc., The, Dayton, Ohio.

CASTINGS—Iron and Steel
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CEMENT—Acid-Proof
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.

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Fairlie, Andrew M., Atlanta, Ga.

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Duriron Co., Inc., The, Dayton, Ohio.
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Barrett Division, The, Allied Chemical & Dye Corp., New York City.
Bradley & Baker, New York City.
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Huber & Company, New York City.

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International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Phosphate Mining Co., The, New York City.
Wellmann, William E., Baltimore, Md.

CHEMICAL PLANT CONSTRUCTION
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Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.
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CONCENTRATORS—Sulphuric Acid
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.

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Dickerson Co., The, Philadelphia, Pa.
Phosphate Mining Co., The, New York City.

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Wellmann, William E., Baltimore, Md.

CRANES AND DERRICKS
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Stedman's Foundry and Mach. Works, Aurora, Ind.

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Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

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Link Belt Speeder Corp., Chicago, Ill., and Cedar Rapids, Iowa.

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Farmers Fertilizer Company, Columbus, Ohio.
International Minerals and Chemical Corporation, Chicago, Ill.
Phosphate Mining Co., The, New York City.
U. S. Phosphoric Products Division, Tennessee Corp., Tampa, Fla.

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Wellmann, William E., Baltimore, Md.

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Atlanta Utility Works, East Point, Ga.
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

GARBAGE TANKAGE
Wellmann, William E., Baltimore, Md.

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Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

GEARS—Silent
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Sackett & Sons Co., The A. J., Baltimore, Md.

GELATINE AND GLUE
American Agricultural Chemical Co., New York City.

GUANO
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Hayward Company, The, New York City.

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Atlanta Utility Works, East Point, Ga.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

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Armour Fertilizer Works, Atlanta, Ga.
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Bradley & Baker, New York City.
Wellmann, William E., Baltimore, Md.

IRON SULPHATE
Tennessee Corporation, Atlanta, Ga.

INSECTICIDES
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Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Wellmann, William E., Baltimore, Md.

LOADERS—Car and Wagon, for Fertilizers
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

MACHINERY—Acid Making
Atlanta Utility Works, East Point, Ga.
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.
Duriron Co., Inc., The, Dayton, Ohio.
Fairlie, Andrew M., Atlanta, Ga.
Monarch Mfg. Works, Inc., Philadelphia, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

MACHINERY—Coal and Ash Handling
Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

MACHINERY—Elevating and Conveying
Atlanta Utility Works, East Point, Ga.
Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

MACHINERY—Grinding and Pulverizing
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
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MACHINERY—Tankage and Fish Scrap
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MAGNETS
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Sackett & Sons Co., The A. J., Baltimore, Md.
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MANGANESE SULPHATE
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MIXERS
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Stedman's Foundry and Mach. Works, Aurora, Ind.

NITRATE OF SODA
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Barrett Division, The, Allied Chemical & Dye Corp., New York City.
Bradley & Baker, New York City.
Chilean Nitrate Sales Corp., New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
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NITRATE OVENS AND APPARATUS
Chemical Construction Corp., New York City.

NITROGEN SOLUTIONS
Barrett Division, The, Allied Chemical & Dye Corp., New York City.

NITROGENOUS ORGANIC MATERIAL
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
DuPont de Nemours & Co., Wilmington, Del.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Smith-Rowland Co., Norfolk, Va.
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NOZZLES—Spray
Monarch Mfg. Works, Philadelphia, Pa.

PACKING—For Acid Towers
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.

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American Cyanamid Co., New York City
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Schmaltz, Jos. H., Chicago, Ill.
Southern Phosphate Corp., Baltimore, Md.
Virginia–Carolina Chemical Corp. (Mining Dept.), Richmond, Va.
Wellmann, William E., Baltimore, Md.

PIPE—Acid Resisting
Duriron Co., Inc., The, Dayton, Ohio.

PIPES—Chemical Stoneware
Chemical Construction Corp., New York City.

PIPES—Wooden
Stedman's Foundry and Mach. Works, Aurora, Ind.

PLANT CONSTRUCTION—Fertilizer and Acid
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.

POTASH SALTS—Dealers and Brokers
American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
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International Minerals & Chemical Corporation, Chicago, Ill.
Jett, Joseph C., Norfolk, Va.
Schmaltz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

POTASH SALTS—Manufacturers
American Potash and Chem. Corp., New York City.
Potash Co. of America, New York City.
International Minerals & Chemical Corp., Chicago, Ill.
United States Potash Co., New York City.

PULLEYS AND HANGERS
Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

PUMPS—Acid-Resisting
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Duriron Co., Inc., The, Dayton, Ohio.
Monarch Mfg. Works, Inc., Philadelphia, Pa.

PYRITES—Brokers
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., New York City.
Wellmann, William E., Baltimore, Md.

QUARTZ
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.

RINGS—Sulphuric Acid Tower
Chemical Construction Corp., New York City.

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McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
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Link-Belt Company, Philadelphia, Chicago.
Link-Belt Speeder Corporation, Chicago, Ill., and Cedar Rapids, Iowa.
Sackett & Sons Co., The A. J., Baltimore, Md.

SPRAYS—Acid Chambers
Monarch Mfg. Works, Inc., Philadelphia, Pa.

SPROCKET WHEELS (See Chains and Sprockets)

STACKS
Sackett & Sons Co., The A. J., Baltimore, Md.

SULPHATE OF AMMONIA
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Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
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McIver & Son, Alex. M. ,Charleston, S. C.

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Ashcraft-Wilkinson Co., Atlanta, Ga.
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Jett, Joseph C., Norfolk, Va.
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International Minerals & Chemical Corporation, Chicago, Ill.
Phosphate Mining Co., The, New York City.
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Monarch Mfg. Works, Inc., Philadelphia, Pa.

TALLOW AND GREASE
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American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
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Schmaltz, Jos. H., Chicago, Ill.
Smith-Rowland, Norfolk, Va.
Wellmann, William E., Baltimore, Md.

TANKAGE—Garbage
Huber & Company, New York City.

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Sackett & Sons, Co., The A. J., Baltimore, Md.

TILE—Acid-Proof
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.

TOWERS—Acid and Absorption
Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.

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Sackett & Sons Co., The A. J., Baltimore, Md.

UREA
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UREA-AMMONIA LIQUOR
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VALVES—Acid-Resisting
Atlanta Utility Works, East Point, Ga.
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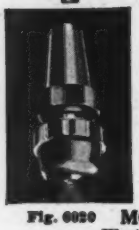

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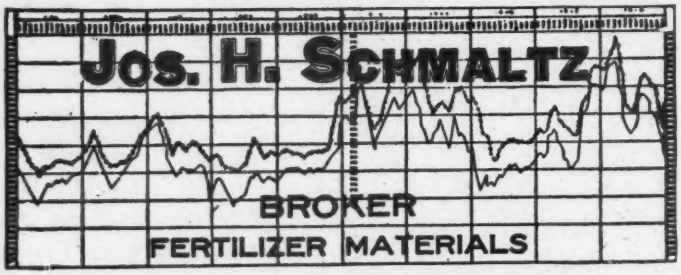

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